



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,948	10/06/2005	Myrtil Kahn	0617-1028	6839
466 7590 06/03/2009 YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314			EXAMINER NGUYEN, KHANH TUAN	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 06/03/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/551,948

Applicant(s)

KAHN ET AL.

Examiner

KHANH T. NGUYEN

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-35, 37-44 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-35, 38-44 and 50 is/are rejected.
- 7) ☒ Claim(s) 37 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed on 03/18/2009 is entered and acknowledged by the Examiner. Claims 25-35, 37-44, and 50 are currently pending in the instant application. Claims 1-24, 36, and 45-49 have been canceled.

Claim Status

2. The rejection of claims 25-44 and 50 under 35 U.S.C. 102(e) as anticipated by U.S. Pub. 2004/0247503 A1 (Hyeon) is withdrawn in view of applicant's amendment. The rejection of claim 37 under 35 U.S.C. 103(a) as obvious over U.S. Pub. 2004/0247503 A1 (Hyeon) is withdrawn in view of applicant's amendment.

3. The rejection of claims 25-35, 38-44 and 50 under 35 U.S.C. 103(a) as obvious over U.S. Pub. 2004/0247503 A1 (Hyeon) is **maintained** for the reasons therein.

Claim Objections

4. Claim 38 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 38 depend from claim 25 which includes the oxidizing agent of dependent claim 38.

(Previously Rejected)

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. The amendments to independent claims 25 and 50 have been fully considered.
7. Claims 25-35, 38-44 and 50 are rejected under 35 U.S.C. 103(a) as obvious over U.S. Pub. 2004/0247503 A1 (Hyeon) as set forth in the Office Action mailed on 11/18/2008 at pages 4-7.

(New Grounds of Rejection)

Claim Rejections - 35 USC § 102/103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
9. Claims 25, 38, 40, 42, and 44 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Pat. 6,395,053 B1 (hereinafter refer to as Fau).

Fau teaches a method of forming metal colloids comprising of an organometallic precursor of tin such as $[\text{Sn}(\text{N}(\text{CH}_3)_2)_2]_2$, as recited in claim 42 and 44, that is dissolve in anisole or toluene solvent (i.e. non-aqueous solvent medium) as recited in claim 40. (See Step 2 at Col. 3, lines 29-35). Fau further teaches, at step 2, that the reaction may

take place under inert gas such as argon or oxidizing gas such as air (Col. 3, lines 54-58) as recited in claims 25 and 38.

The reference specifically or inherently meets each of the claimed limitations.
The reference is anticipatory.

In the alternative that the above disclosure is insufficient to anticipate the above listed claims, it would have nonetheless been obvious to the skilled artisan to produce the nanoparticle by claimed process, any minor modification necessary to meet the claimed limitations would have been within the purview of the skilled artisan.

Allowable Subject Matter

10. Claim 37 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Hyeon alone or in combination does not teach or suggest a process that does not involve thermal treatment (i.e. heating) to produce the nanoparticle of crystalline metal oxides as recited in claim 37.

Response to Arguments

11. Please note, claims 25-35, 38-44 and 50 stand rejected under 35 U.S.C. 103(a) over U.S. Pub. 2004/0247503 A1 (Hyeon) only.

12. Applicant's arguments filed on 03/18/2009 have been fully considered but they are not persuasive.

In response to the applicant's remark on page 9, applicant argues that the method of Hyeon differ from the claimed method because the process of oxidation in Hyeon is not a process for the direct preparation of metal oxide nanoparticles and it requires numerous steps to obtain metal oxide nanoparticles. The examiner respectfully disagrees with the Applicant argument. As acknowledged by applicant on page 13 of the remark, 2nd paragraph, Hyeon disclose one example of direct synthesis of iron oxide nanoparticles (See Example 6 of Hyeon). In addition, the transitional term "comprising" recited in claim is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., > Mars Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1376, 71 USPQ2d 1837, 1843 (Fed. Cir. 2004); and < Invitrogen Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."). Thus, the numerous steps required by Hyeon still form a construct within the scope of the claim method.

Applicant also argues, on page 10, that the claimed process is different from Hyeon in that the claimed metal oxide nanoparticles are obtained under mild conditions of ambient temperature as recited in amended claim 25. Specifically, contacting the organometallic precursor liquid solution with at least one oxidizing agent selected from the group consisting of water, ambient air, and pure dioxygen gas at ambient temperature to thereby directly bring about the production of nanoparticles of crystalline metal oxide(s). The examiner respectfully disagrees with the Applicant argument.

Applicant should refer to paragraphs [0024] and [0027] of Hyeon wherein Hyeon suggest a process of synthesizing a metal oxide nanoparticle comprising of an oxygen oxidant (i.e. air) at a temperature as low as 30°C. The synthesis of metal oxide nanoparticle in oxygen at 30°C is readable the mild conditions of ambient temperature as recited in amended claim 25.

Applicant further stated on page 12 of the remark, 1st paragraph, that the amended claim 50 now recites "consisting essentially of", and thereby excludes the extra steps recited in Hyeon. The examiner respectfully disagrees with the Applicant argument. The "consisting essentially of" language does not necessarily exclude the additional steps of Hyeon because "consisting essentially of" renders the composition or method open to the inclusion of unspecified ingredients or method steps which do not materially affect the basic and novel characteristics of the composition, see *Ex parte Davis et al.* (Bd of Appeals), 80 USPQ 448. Applicants have not submitted factual evidence showing that the additional steps of Hyeon materially affect the instant invention. The "consisting essentially of" terminology do not exclude the presence of additional steps, unlike the narrow "consisting of" language, see *Swain v. Crittendon*, 332 F 2d 820, 14 1 USPQ 8 11 (CCPA 1964). Thus, the additional steps required by Hyeon still form a construct within the scope of the claim method recited in claim 50.

Based on the above rational, it is believed that the claimed limitations are met by the reference submitted and therefore, the rejection is maintained.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571) 272-8082. The examiner can normally be reached on Monday-Friday 7:00-4:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Kopec/
Primary Examiner, Art Unit 1796

/KTN/
Examiner
05/31/2009